

CHAOS AND NONLINEAR DYNAMICS



A chaotic attractor generated from equations describing a driven nonlinear circuit

Chaos and nonlinear dynamics show that the world is not as predictable as scientists once thought. Small changes in starting points of systems can radically affect the state they will end up in. This applies whether the systems are physical (magnetic materials, electrical circuits, fluid flow), celestial (solar system, galaxy evolution, neutron stars), chemical, or biological (disease dynamics, heart beats). New mathematical and computer techniques have recently been implemented to help scientists deal with this new phenomena. A combination of computer calculations and electronic circuit experiments has been used to display the existence of riddled basins of attraction, synchronous chaos, magnetic strange attractors, and control of chaotic systems.

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